



Content Guide 2023/24

New Zealand Health Survey



New Zealand Health Survey

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This report was compiled by the Health Surveys team in the Data Analytics and Surveys Group, Ministry of Health.

Citation: Ministry of Health. 2024. *Content Guide 2023/24: New Zealand Health Survey*. Wellington: Ministry of Health.

Published in November 2024 by the Ministry of Health
PO Box 5013, Wellington 6140, New Zealand

ISBN 978-1-991324-05-4 (online)
HP 9098



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Introduction

This guide describes the content of the New Zealand Health Survey (NZHS) for the year ended 30 June 2024. This guide also briefly outlines the history of the NZHS and its development into a continuous survey, describes the process for developing the adult and child questionnaires for 2023/24 and provides an overview of each section of the survey. The questionnaires are available along with this report on the Ministry of Health's (the Ministry's) website: health.govt.nz

Background

The NZHS was first undertaken in 1992/93, with further surveys taking place in 1996/97, 2002/03 and 2006/07. The Ministry's wider health survey programme included surveys on adult and child nutrition; tobacco, alcohol and drug use; mental health; and oral health. From 2011, the Ministry integrated the NZHS and these other surveys from its wider survey programme into a single survey, which is now in continuous operation. The rationale for this change is detailed in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010).

As a signatory to the *Protocols of Official Statistics* (Statistics New Zealand 1998), the Ministry employs best-practice survey techniques to extract high-quality information from the NZHS. It uses standard frameworks and classifications, with validated questions where possible, so that NZHS data can be integrated with data from other sources.

Survey design and methodology

The target population for the survey is New Zealand's usually resident population of all ages, including those living in non-private accommodation. The NZHS sample is selected using a stratified, multi-stage area design. Respondents are adults aged 15 years and older, as well as children aged 0–14 years, who are interviewed through their parent or legal guardian acting as a proxy respondent. Most of the survey questionnaire is conducted in the respondent's home, through face-to-face interviews, using computer-assisted personal interviewing (CAPI) software. Respondents self-complete some parts of the survey where the questions are potentially sensitive.

In 2021/22, computer-assisted video interviewing (CAVI) was introduced in response to the contact restrictions imposed in the COVID-19 pandemic response. Most interviews continue to be conducted with CAPI. The CAVI system provides a secure, private online 'room' where an interviewer and respondent can meet to complete the survey together, in a way that closely resembles an in-person interview. The system features an integrated video call component and a large survey window. The respondent can view the showcards on the screen and complete the self-complete questions themselves. Video interviewing is offered to respondents who are apprehensive or reluctant to have an interviewer in their home; for example, because they are unwell.

The NZHS sample design and methodology will be published online alongside this report, on the Ministry's website: health.govt.nz.

Goal and objectives

Goal

The goal of the NZHS is to monitor and research the health and wellbeing of New Zealanders, including how people experience their own health and health services. The NZHS collects detailed information about people both inside and outside the health system and their lifestyles and behaviours. The information it seeks is not easily obtained from health administrative databases. The survey allows us to measure differences between population sub-groups to identify inequities.

Objectives

To achieve this goal, four high-level objectives have been identified for the NZHS. These are to:

1. provide an evidence base to inform health system funding, policy, programmes and advocacy with a focus on long-term priorities
2. monitor and research population health status and the prevalence of key health behaviours and risk factors
3. monitor barriers to access and use of health care services
4. provide ability to carry out robust statistical analysis and enable linkage to other data collections to address wider information needs.

Questionnaire components

To meet the high-level objectives of the NZHS, detailed information is collected across information areas or domains. The NZHS includes a set of questions drawn from these domains. These core questions remain the same each year. The NZHS also includes supplementary questions that examine a topic in more depth. These 'module' questions change each year.

Table 1 summarises the topics included in the core content of the 2023/24 NZHS.

Table 1: New Zealand Health Survey 2023/24 core content

Domain	Topics
Children	
Long-term health conditions	Asthma, eczema, attention deficit hyperactivity disorder, autism spectrum disorder
Health status	Parent-rated health
Health behaviours and risk factors	Nutrition, physical activity, screen time, sleep, tooth brushing, child discipline
Health care services: utilisation and barriers	General practitioners (GPs), nurses, emergency departments (EDs), prescriptions, dental health care workers, getting help for mental health and substance use concerns
Household food security	Household food security
Sociodemographics	Child: gender, age, ethnicity, country of birth, health insurance, Household: housing, household income, household composition (age, gender and the relationship between all household members) Primary caregiver: education and employment status
Health measurements	Height, weight, waist circumference
Adults	
Long-term health conditions	Heart disease, stroke, high cholesterol, high blood pressure, diabetes, asthma, arthritis, chronic pain, hysterectomy
Health status	General health (physical and mental health), functional difficulties (disability status), psychological distress, life satisfaction, family wellbeing, loneliness
Health behaviours and risk factors	Tobacco smoking, vaping, alcohol use, drug use, nutrition, physical activity, sleep, tooth brushing
Health care services: utilisation and barriers	General practitioners, nurses, EDs, prescriptions, dental health care workers, getting help for mental health and substance use concerns
Sociodemographics	Adult: sex, gender, age, ethnicity, sexual orientation, languages spoken, country of birth, education, personal income and income sources, employment status, health insurance Household: housing, household income, household composition (age, gender and the relationship between all household members)
Health measurements	Height, weight, waist circumference, measured blood pressure

Notes: Health measurements (including measured blood pressure) were not collected in the 2021/22 NZHS due to COVID-19 restrictions. Blood pressure was not measured in the 2017/18 and 2022/23 surveys due to a lack of time. Body size measurements were reintroduced to the survey in 2022/23 and blood pressure measurements were reintroduced in 2023/24.

Because of its size and importance, the health behaviours and risk factors domain has been split into a number of modules, including physical activity, tobacco use, alcohol consumption, drug use, problem gambling, and sexual and reproductive health. Some modules may run together in the same year of the survey (eg, tobacco, drug and alcohol use ran together in the 2012/13 survey).

The continuous nature of the survey also makes it possible to incorporate shorter (one- to three minute) 'clip-on' modules. These clip-on modules may address an urgent emerging issue or an important topic where policy development or monitoring

requires additional information that can be obtained through a small number of questions.

Process for developing the New Zealand Health Survey

The Ministry's Evidence, Research and Analytics Group developed the adult and child questionnaires for the NZHS in consultation with key internal stakeholders (eg, policy groups) and external stakeholders (eg, technical experts and data users).

Core component

The NZHS aims to maintain continuity with previous surveys so that time trends can be analysed. To facilitate this approach, the 2006/07 NZHS was used as a 'question bank'; that is, where possible, the wording of the core questions, response options, show-cards and interviewer prompts from the 2006/07 NZHS has been retained in subsequent surveys.

Topics for inclusion in the core component of the NZHS were based on those outlined in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010). The following four criteria were used to determine the topics that would be included each year as core components.

- Impact – the topic has a large impact on health, health policy or health care costs.
- Measurability – the topic lends itself to robust measurement, including high reliability and validity and responsiveness to change.
- Disaggregation – the data that can be collected on the topic can be analysed by social group or region.
- International comparability – the topic lends itself to meaningful international benchmarking.

Priority was given to questions that related to key indicators or outputs and could be used to monitor important health-related time trends. Results on an indicator or output that were included in *A Portrait of Health: Key results of the 2006/07 New Zealand Health Survey* (Ministry of Health 2008) were considered to be important.

Most of the questions selected for the core component of the survey were from the 2006/07 NZHS. The 2006/07 NZHS included a number of questions from validated instruments, such as the Kessler 10 (K10, Andrews and Slade 2001) and the Alcohol Use Disorders Identification Test (AUDIT, Babor et al 2001). Most other questions selected for the NZHS core occurred in at least one previous survey (1992/93, 1996/97 and/or 2002/03).

The need to sustain time series has to be balanced against updating and improving core questions and adding new core questions. Where needed, questions will generally be improved when a topic area covered by a core question is reviewed in depth during the development of a related module.

The core component of the NZHS includes measuring height and weight in respondents aged two years and older, waist circumference in respondents aged five years and older and blood pressure in respondents aged 15 years and older.¹

Module component

These module topics in the 2023/24 NZHS are:

- racial discrimination for adults
- self-perceived height and weight for adults
- migraine for adults
- tobacco, vaping and exposure to second-hand smoke for adults
- exposure to second-hand smoke for children
- child development for children.

A module on functional difficulties for children (Child Functioning Module, CFM) and extra questions on functional difficulties for adults (Washington Group Short Set Enhanced, WG-SS Enhanced) were added for the first time in the 2022/23 survey and continue to be included.

Details of question development are explained in 'Content of the New Zealand Health Survey' below.

All the module topics for the continuous NZHS until 2023/24 are summarised in Table 2.

¹ Adult and child health measurements were not taken in the 2021/22 NZHS because of COVID-19 restrictions.

Table 2: New Zealand Health Survey module topics, 2011/12–2023/24

Year of NZHS	Child module topic(s)	Adult module topic(s)
2011/12	Health service utilisation and patient experience	Health service utilisation and patient experience Problem gambling Racial discrimination
2012/13	Child development Household food security Exposure to second-hand smoke	Alcohol use Tobacco use Drug use
2013/14	Long-term conditions Health status Disability status Living standards Housing quality Exposure to second-hand smoke	Long-term conditions Health status Disability status Living standards Housing quality
2014/15	Child development Household food security Rheumatic fever	Sexual and reproductive health Biomedical tests Rheumatic fever (under 25 years)
2015/16	Child development Household food security ² Exposure to second-hand smoke Rheumatic fever	Tobacco use Rheumatic fever (under 25 years)
2016/17	Behavioural and developmental problems Rheumatic fever	Mental health and substance use Rheumatic fever (under 25 years) Racial discrimination
2017/18	Health service utilisation and patient experience	Health service utilisation and patient experience Understanding health and health care
2018/19	Dietary habits Functional difficulties (WG-SS)	Dietary habits Functional difficulties (WG-SS) ³ Alcohol use
2019/20	Household food security Dietary habits Functional difficulties (WG-SS)	Household food security Dietary habits Alcohol use
2020/21	Functional difficulties (WG-SS) Child development	COVID-19 Racial discrimination
2021/22	Behavioural and developmental problems	Mental health and substance use COVID-19

² The household food security questions became 'core' for the child questionnaire in 2019/20, so this is not counted as a module after the 2015/16 NZHS.

³ The functional difficulties (WG-SS) questions became 'core' for the adult questionnaire in 2019/20 so are not counted as a module for adults after the 2018/19 NZHS. Six more questions were added as a module in 2022/23 to form the WG-SS Enhanced.

Year of NZHS	Child module topic(s)	Adult module topic(s)
2022/23	Behavioural and developmental problems Functional difficulties (CFM) ⁴	Mental health and substance use Extra questions on functional difficulties (WG-SS Enhanced)
2023/24	Exposure to second-hand smoke Child development Functional difficulties (CFM)	Self-perceived height and weight Migraine Tobacco, vaping and exposure to second-hand smoke Extra questions on functional difficulties (WG-SS Enhanced) Racial discrimination

Cognitive testing

Cognitive testing helps ensure questions are understood as intended and that response options are appropriate. The cognitive testing process includes:

- comprehension – how does the respondent understand the question?
- recall – what knowledge or memory does the respondent select that is relevant to the subject matter?
- judgement and selection – how does the respondent judge what they remember and formulate a response?

Initially, new or changed questions are cognitively tested with colleagues as respondents. Then a smaller number of questions are prioritised for cognitive testing with relevant populations (demographic variety, extreme cases etc). Ipsos Limited, an Auckland-based independent public health research provider (formerly known as CBG Health Research Limited), carries out this second stage of cognitive testing. Ministry researchers assess these findings to decide if the new questions work well or require changes before being implemented.

The Ministry provided probe questions for individual questions and respondents in cognitive testing were invited to comment on:

- question flow/sequencing
- level of engagement/satisfaction with the questions
- problems/issues with the questionnaire.

Cognitive testing for the 2023/24 questionnaires focused on testing that new or changed questions could be understood as intended and response options were appropriate. The migraine module was cognitively tested first in November 2022, and the tobacco, vaping and exposure to second-smoke modules were tested in February 2023. Other changes were not cognitively tested because they were either modules being repeated from earlier years or relatively minor changes to core questions that

⁴ The functional difficulties module questions used for children in the 2018/19, 2019/20 and 2020/21 surveys (WG-SS) did not work well to identify disabled children. In 2022/23, a different set of module questions (CFM) was used. This set of questions is better at identifying disabled children, and these questions are likely to become core questions.

were being made to match established practice in other national surveys (such as the General Social Survey run by Stats NZ).

Cognitive testing of migraine module 2023/24

Researchers conducted face-to-face interviews with 40 adults aged 15 years and over to test new and modified questions in the migraine module.

About half of respondents who took part in the cognitive testing were adults recruited via the survey providers' existing professional and personal networks. The remaining half were adult and child respondents who had participated in past NZHSs and agreed to be recontacted for further research. The latter half were selected to represent people with more complex health stories.

Generally, the questions were understood as intended. No changes were made to the migraine questions following the cognitive testing.

Cognitive testing of tobacco, vaping and exposure to second-hand smoke modules 2023/24

Researchers conducted face-to-face video interviews with 40 adults aged 15 years and over to test new and modified questions in the tobacco, vaping and exposure to second-hand smoke module of the 2023/24 NZHS. The questions selected for testing consisted of nine questions for the updated tobacco, vaping and exposure to second-hand smoke module for adults and two questions on exposure to second-hand smoke for caregivers of children aged 5–14 years.

Respondents who took part in the cognitive testing comprised current smokers, ex-smokers, current vapers and ex-vapers who had been interviewed as part of the 2021/22 NZHS adult sample and had agreed to be recontacted for further research.

Generally, the questions were understood as intended. Some small wording changes were made to ensure that as many respondents as possible understood the questions as intended.

Pilot testing

The purpose of the pilot testing was to mimic the main survey as closely as possible, to ensure that the questionnaire and associated survey processes were robust and functioning correctly.

The main objectives of the pilot testing were to:

- ensure that the questionnaires performed as expected, with all routing, edits and consistency checks working correctly
- determine the average duration for each element of the questionnaire, as well as the survey process overall

- identify and explore questions with high non-response rates
- identify any problems with new or modified questions
- evaluate whether the training provided was adequate and fully prepared the interviewers to work on the project and answer any questions raised by respondents
- identify any risks to the main fieldwork
- evaluate how respondents engaged with the survey
- evaluate the survey flow

Additionally, there were specific objectives to:

- evaluate the length of the survey with the blood pressure measurement added back in and the extent to which respondents accepted reintroduction of this measurement
- confirm acceptability of the framing of a new question about use of vaping devices.

Interviewers tested the survey on 112 respondents from different age, gender and ethnic groups from households in varying socioeconomic areas, with a varying representation of urban and rural areas. The respondents were recruited using the usual NZHS process for respondent selection. Most of the survey was conducted in respondents' homes, through face-to-face interviews, using CAPI software. Respondents self-completed some parts of the survey, where the questions were potentially sensitive.

Generally, the pilot testing went well and no major problems were identified. We note the following points.

- The decision to reintroduce measured blood pressure (after it had not been included for two years) was confirmed. The pilot was used to estimate the total length of the survey, and showed that the blood pressure measurements would fit. As usual, respondents were interested to see their blood pressure results.
- For the new question about use of vaping devices, bold emphasis was added to timeframes (eg, 'once a week' and 'last 12 months') to aid respondents recalling the correct timeframes.
- Interviewer training materials on the migraine module were updated to explain the nature of a screening tool, but the questions remained the same, as they are a standard instrument and well understood.
- Self-complete questions on income worked well – answering these questions can be a source of embarrassment for respondents.

Ethics approval

The Health and Disability Ethics Committee (HDEC) approved the NZHS 2023/24 (Health and Disability Ethics Committee Reference: MEC/10/10/103).

Content of the New Zealand Health Survey

The adult and child questionnaires included the following sections, which are core to the questionnaires unless noted otherwise:

- long-term health conditions
- access to health care
- health behaviours and risk factors
- health status
- child development module (children only)
- household food security (children only)
- sociodemographics
- health measurements⁵
- permission details for data linkage and follow up survey participation.

Long-term health conditions

Long-term health conditions cover any ongoing or recurring health problem, including a physical or mental illness, which has a significant impact on a person's life and/or the lives of family, whānau or other carers. Such conditions are generally not cured once acquired. For the purposes of monitoring population health, a long-term health condition is defined in the NZHS as a health condition that has lasted, or is expected to last, for more than six months and is based on a respondent's self-report of what a doctor told them.

This section collects information on the prevalence of major long-term conditions (see Table 3) as well as treatments for these conditions.

In the 2017/18 NZHS, a new core question about self-rated oral health question was included for adults and children aged 1–14 years, asking them to rate the health of their teeth or mouth. This question was also included in the 2009 New Zealand Oral Health Survey and the 2013/14 NZHS long-term conditions module.

In the 2018/19 NZHS, the question about having ever had a hysterectomy was added to the core for female respondents aged 20 years and over. It was previously included as a module question in the 2006/07, 2013/14 and 2014/15 surveys. In the 2022/23 survey, this question was changed to a self-complete question that reverts to face-to-face if the respondent cannot self-complete.

⁵ Adult and child health measurements were not taken in the 2021/22 NZHS because of COVID-19.

In the 2022/23 NZHS, questions about being diagnosed with mental health conditions (anxiety, depression or bipolar disorder) at any point in their lifetime were removed for adults and children. Respondents complained of too many questions on mental health, and these questions were not capturing the information stakeholders wanted (that is, prevalence of current mental health conditions). Questions on diabetes and rheumatic heart disease were removed for children because the prevalence of children with these conditions in New Zealand is too low to report robust statistics from NZHS data.

In the 2023/24 NZHS, the questions in this section of the child questionnaire changed slightly – instead of asking if a ‘doctor’ had ever told respondents that their child had asthma or eczema, the survey asked whether a ‘doctor or nurse’ had done so. Asthma and eczema can be diagnosed in children by suitably qualified nurses, not just doctors.

Migraine

Migraine disease is a complex neurological condition that affects an estimated 753,000 people in New Zealand. This estimate is from the Global Burden of Disease (GBD) study, which measures the impact of diseases on death rates and disability around the world (Institute for Health Metrics and Evaluation, 2024). In 2021, migraine was ranked as the sixth cause of non-fatal health loss in New Zealand – below low back pain (12.0%) and anxiety disorders (6.7%) and with a similar impact to major depression (4.2%).

The migraine module questions were included in the NZHS for the first time in 2023/24, although one question about doctor-diagnosed migraines had previously been included in the 2013/14 long-term conditions module. The other questions in the migraine module comprised one question about having headaches and three questions that form the ID-Migraine test™ (Lipton et al 2003). The ID-Migraine test™ consists of a set of three questions that have been validated in multiple countries, settings and languages and tested against a gold standard of migraine diagnosis (a semi-structured diagnostic interview and examination by a headache specialist with diagnosis consistent with the International Classification of Headache Disorders; Cousins et al 2011; Olesen 2018; Potter et al 2019). The migraine module will provide estimated prevalences of people experiencing migraines and an updated prevalence of people diagnosed with migraines. By comparing the two, we will also be able to estimate rates of under-diagnosis of migraines. Understanding whether migraines are more likely to be under-diagnosed in certain groups could help inform policy and resourcing decisions.

Table 3: Long-term health conditions

Adult	Child
Heart disease	Asthma
Stroke	Eczema
Diabetes	Autism spectrum disorder
Asthma	Attention deficit hyperactivity disorder
Arthritis	Oral health
Chronic pain	
Migraine (module)	
Hysterectomy	
Oral health	

Access to health care

The use of appropriate and effective health care services is an important determinant of population health. Areas of interest for the NZHS include the frequency of health care contact; the range and comprehensiveness of health services; their accessibility, availability and affordability; and the continuity and coordination of care they provide.

The NZHS focuses on health service utilisation in the primary health care setting, which is often people's first point of contact with the health system. Nearly all New Zealanders (over 90%) have a primary health care provider (Ministry of Health 2022), and the NZHS provides a comprehensive source of data on primary health care utilisation. Therefore, a number of questions focus on consultations with GPs and primary health care nurses.

In the 2017/18 NZHS, there were some changes to the questions about visits to primary health care nurses. In the survey, the term 'practice nurse' was replaced with 'nurse at GP clinic or medical centre' in case 'practice' could be misinterpreted to mean a nurse who is not fully qualified. New questions were added about primary health care nurse visits that were completed as part of a GP consultation (including seeing the nurse before or after seeing the GP). These questions were also included in the 2006/07 NZHS.

In a specific change to only the 2020/21 NZHS, questions about visits to primary health care services were changed to include video or phone appointments, which became more common ways of accessing primary health care due to restrictions during COVID-19 Alert Levels. New questions were also added to the 2020/21 adult and child questionnaires about barriers to accessing health care due to COVID-19. Respondents were asked if in the past 12 months, because of COVID-19, there was a time when they:

- had a medical problem but did not visit or talk to a GP
- did not collect one or more prescription items from the pharmacy or chemist
- had a medical problem outside regular office hours but did not visit an after-hours medical centre.

The health service utilisation section was refreshed for the 2021/22 NZHS in consultation with key stakeholders. It was decided that a key focus for this section would be to collect more information on barriers to access and unmet need. Several questions were removed, as follows.

- The patient experience questions were removed because this data is better captured by the Health Quality & Safety Commission patient experience surveys.
- The questions on after-hours medical services were removed because of difficulty in defining after-hours services in a simple concise manner, which caused confusion for respondents.
- The questions about hospital use were removed as administration data was readily available and preferred over the self-reported NZHS.
- Questions about cost for visiting nurses as part of consultation at general practices and medical centres were also removed because of the potential misrepresentation of self-reported costs. Nurse visits are often accompanied by GP consultation, and respondents may not separate these components.
- Questions about visits with specialist doctors were removed as information on the use of secondary- and tertiary-level health services (public and private hospitals and medical specialists) can generally be captured in more detail from administrative databases. In addition, the questions were difficult for respondents and the information was not useful at a national level, as there was no link to the actual specialist or district health board.
- A question about other health care worker visits was removed as the question was found to be difficult and a burden on respondents.

In the 2021/22 NZHS, four new questions were added.

- A question on visits with various health care workers at a usual medical centre was added, to acknowledge the way the primary health care model has evolved. More medical centres now have a practice team-based approach, rather than focussing on GPs. This data will be used to monitor primary health care team utilisation, as administration data does not separate this out.
- A question on barriers to accessing a GP has been expanded. This information is not easily obtainable from other sources. The NZHS includes information from people who do not engage with the health system, whereas administrative data only includes people who do.
- Two new questions were added about referrals to specialist doctors and reasons why people could not see a specialist after receiving a referral. These questions use a five-year recall period to capture a sufficient number of referrals. These two questions were removed in 2023/24, as they did not capture the information needed.

In the 2021/22 NZHS, some questions in this section were revised. These questions were about visits to a GP clinic or medical centre, frequency of and barriers to visiting a GP and the use of ED services.

Getting help for mental health and substance use concerns

In the 2023/24 NZHS, four questions about getting help for mental health and substance use concerns were added to the adult and child core questionnaires, to monitor use of and barriers to accessing these services closely over time and across subgroups. The questions were previously asked in the 2016/17, 2021/22 and 2022/23 surveys' mental health modules. These questions ask respondents which people and services (if any) they have sought help from for concerns about their emotions, behaviour, stress, mental health or substance use. The respondents are then asked whether they have felt a need to get professional help but didn't receive that help and, if they didn't receive help, why that was. Questions are modified versions of questions used in Te Rau Hinengaro, The New Zealand Mental Health Survey, conducted in 2003/04 (Oakley Browne et al 2006), and the Canadian Community Health Survey (2012).

There were minor wording changes between the questions used in the 2016/17 NZHS and those in the 2021/22 and 2022/23 surveys, as follows.

- The term 'peer support worker' was added to the question for adults on which people were consulted about concerns about emotions, stress, mental health or substance use.
- Three additional barriers were added to the reasons for unmet need for professional help, for both adults and children:
 - time taken to get an appointment was too long
 - available services did not meet cultural or language needs
 - health professionals were unhelpful or unwilling to help.

There was a further minor change to a question in the 2023/24 NZHS for children – three categories of different types of nurses were combined into one category for the question on which people were consulted about concerns about emotions, stress, mental health or substance use, to reduce respondent burden.

The question topics included in the health service utilisation section of the NZHS are summarised in Table 4. Most of the topics listed were included in both the adult and child survey, but some were in the adult survey only.

Table 4: Health service utilisation

Health service setting	Topics
Usual primary health care provider	Type of service, timely access, health checks, health discussions
General practitioners	Visits in last 12 months, visit cost, unmet need / barriers to access
Prescription medicines	Unmet need / barriers to access
Nurses at general practices and medical centres	Visits in last 12 months
Emergency departments	Visits in last 12 months, reason for last visit

Dental health care workers	Length since last visit, reason for visit, barrier to access
Getting help for mental health and substance use concerns	People and services respondents asked for help from, unmet need / barriers to access

Health behaviours and risk factors

Health behaviours and risk factors can have a direct or indirect impact on health and wellbeing. For example, smoking has a direct impact on health, while education has an indirect impact by informing and influencing our ability to make better health choices. Health behaviours that have a negative effect on health are referred to as risk factors (eg, smoking), while health behaviours that have a positive effect on health are referred to as protective factors (eg, eating healthy foods such as vegetables and fruit).

Monitoring trends in exposure to risk and protective factors informs the development and evaluation of health policy, especially policy related to health promotion, disease prevention and primary health care. The measurement of risk and protective factors is part of the internationally recognised minimum standards for health surveys. These standards, developed by the World Health Organization (WHO), comprise the STEPwise approach to surveillance of risk factors for non-communicable diseases (STEPS) (WHO 2005).

The core health risk and protective factor questions are based on a subset of questions from the 2006/07 NZHS, some of which were also included in earlier surveys. This provides important time-series information on topics such as smoking.

Substance use risk factors

Alcohol

The questions about alcohol use come from the Alcohol Use Disorders Test (AUDIT). The AUDIT is a 10-item questionnaire that covers three aspects of alcohol use: alcohol consumption, dependence and adverse consequences. A score of eight or more indicates a hazardous drinking pattern. A respondent can reach a score of eight from the alcohol consumption items of the questionnaire alone, for example, by drinking six or more drinks on one occasion, twice a week (Babor et al 2001).

In 2015/16, two alcohol questions were changed in the AUDIT section of the NZHS. Before 2015/16, the NZHS did not define 'drinks' in the two AUDIT questions covering typical quantity and frequency of heavy drinking. To ensure respondents interpreted the meaning of 'drinks' in the same way, the authors of the AUDIT recommended that each country apply its own definition of a standard drink (which, in New Zealand, is 10 g pure alcohol), with illustrations of standard drinks in local beverages. For this reason, for the 2015/16 survey, the two AUDIT alcohol consumption questions were changed from 'drinks' to 'standard drinks' and included a show-card illustrating the number of standard drinks in various common beverages. The changes were only made for half the survey sample (selected randomly) in order to assess their impact. From 2016/17, the NZHS only uses the standard drinks show-card version of AUDIT, creating a break in the time series.

Illicit drugs

In the 2017/18 NZHS, the question about drug use was changed from interviewer-administered to self-completed to encourage more honest responses. Respondents who were taking part in the interview with cognitive or language assistance from a family member, caregiver or friend were not asked this question. This was to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship.

In the 2017/18 NZHS the drug use question was moved to the end of the survey so the self-completed questions were asked together. In the 2018/19 NZHS it was moved to the health behaviours and risk factors section to be asked alongside other self-completed questions relevant to that section of the questionnaire. In 2021/22, the drug use questions were changed back to being interviewer-administered. This was to encourage all respondents to answer the questions as respondents were less inclined to self-complete them. Survey results indicated prevalence did not change markedly with administration mode.

In 2020/21 the drug categories and the drug section introduction were updated to align with the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). This included capturing drug use other than as prescribed. Because the nature of the drug use question has changed, data collected is unlikely to be comparable with previous years.

Questions on cannabis from the ASSIST question set were added to the 2020/21 NZHS. The ASSIST question set is a validated screening tool developed by the World Health Organization, which can be used to monitor the harmful effects of cannabis use. It has previously been used in the mental health and substance use module in the 2016/17 NZHS.

Scoring involves calculating a risk score for cannabis, and respondents are categorised into low-, moderate- and high-risk categories. A score of 4–26 is considered moderate risk and 27 or more high risk. Scores should be interpreted as estimating the risk of problematic use, not actual disorder prevalence, although studies indicate the instrument is reasonably good at discriminating between non-problematic use and substance abuse.

For the ASSIST manual, which covers the scoring system, go to:
[who.int/publications/i/item/978924159938-2](https://www.who.int/publications/i/item/978924159938-2)

Tobacco and vaping

Smoking is a leading cause of potentially avoidable health loss in New Zealand (measured in disability-adjusted life years (DALYs)). In 2021, smoking accounted for 6.7% of health loss from all causes, and exposure to second-hand smoke accounted for 0.5% (Institute for Health Metrics and Evaluation 2024). Vaping products have the potential to improve the health of people who choose to switch from tobacco smoking. Although less harmful than smoking, vaping is not harmless, and schoolteachers and professional bodies have expressed concerns about young people

vaping. It is therefore important to monitor the uptake of vaping in New Zealand. The NZHS includes questions for adults about whether they have ever tried vaping and how often they now vape.

In the 2023/24 NZHS, some of the core tobacco and vaping questions were refreshed, and further module questions on tobacco and vaping were positioned among the core tobacco and vaping questions to enable the best flow.

The core tobacco and vaping questions were refreshed as follows.

- The question about which tobacco products the respondent smoked the most was removed – this information is no longer considered relevant.
- The question on smoking quit attempts was split into two questions, to capture shorter attempts while still retaining the time series on quit attempts lasting one week or more.
- The term 'vaping devices' is now used in the questions in this section, to cover both vaping devices and electronic cigarettes. Respondents were also asked not to include cannabis if they had vaped cannabis on its own.

The tobacco and vaping module questions were based on questions included previously in modules on tobacco and vaping, in the 2012/13 NZHS and 2015/16 NZHS. The tobacco and vaping module questions in the 2023/24 NZHS were selected to enable continued monitoring of the Smokefree Aotearoa 2025 Action Plan. They are listed in Table 5 below.

Table 5: Tobacco and vaping module

Topic	Question(s)
Smoking initiation	Age respondent tried first cigarette
Uptake of daily smoking	Age respondent started smoking daily
Quitting smoking	Products and services used for help
Exposure to second-hand smoke (adults and children)	Whether anyone smokes in the home with the respondent Whether anyone smokes while travelling with the respondent
Vaping	Whether respondent used a vaping device at least once a week for a month or longer How long ago respondent stopped vaping Reasons for vaping

Nutrition and physical activity

Poor diet and excess body weight are leading causes of potentially avoidable health loss in New Zealand. In 2021, high body mass index (BMI) accounted for 7.6% of health loss from all causes (measured in DALYs). Dietary risks accounted for 5.8% (Institute for Health Metrics and Evaluation 2024).

The 2016/17 NZHS included two new questions about screen time for children aged 2–14 years. The Ministry developed these questions to measure the amount of time children spend watching television or looking at a screen (excluding time spent looking

at screens at school or for homework). From 2017/18, the questions about screen time were also asked for children aged 6 months to 2 years to measure screen time in the younger age group as well.

In the 2021/22 NZHS, the vegetable and fruit intake questions were refreshed to align with the updated *Eating and Activity Guidelines for New Zealand Adults* (Ministry of Health 2020). These guidelines recommend a different number of serves depending on age and gender for both adults and children. The highest number of serves recommended is six or more servings of vegetables, for men aged 19–50 years. The definition of a serve is different for some fruits and vegetables than it was in the old guidelines. For example, half a medium potato, rather than a whole potato, is now considered a serve. One cup of salad, rather than half a cup, is now considered a serve. The refreshed questions allow for a greater number of serves and revised definitions of some of the serves.

Sleep

Getting enough quality sleep is important for brain functioning, emotional wellbeing and physical health. The NZHS for adults and children asks how much sleep the respondent usually gets in a 24-hour period. This question originally came from the United States' National Health Interview Survey and was also included in the 2013/14 NZHS long-term conditions module. For the 2017/18 NZHS, an interviewer note was added to ensure interviewers use a consistent method of rounding to a whole number.

Oral health

The Ministry recommends brushing teeth twice a day with standard fluoride toothpaste. The NZHS for adults and children asks how often the respondent brushes their teeth and what type of toothpaste they usually use. These tooth-brushing questions became part of the core NZHS in 2017/18. The show-card for the question on type of toothpaste used includes pictures to help respondents differentiate between categories, particularly between standard and low-fluoride toothpaste. In 2021/22, the show-card pictures changed slightly to reflect products available on the market. Similar questions on tooth brushing were included in the 2013/14 NZHS long-term conditions module.

Table 6 shows the topics included in the core NZHS component of the health behaviours and risk factors section.

Table 6: Health behaviours and risk factors

Adult	Child
High blood pressure	Perceptions of child's weight
High blood cholesterol	Breastfeeding
Dietary habits	Dietary habits
Physical activity	Physical activity (sedentary behaviour)
Sleep	Screen time
Tooth brushing	Sleep
Tobacco use	Tooth brushing
Vaping	Response to child's misbehaviour
Alcohol use	
Drug use	

Health status

Monitoring the health status of the population provides useful information to evaluate the performance of the health system, identify unmet need for health services, evaluate the impact of the determinants of health and uncover health problems that require further investigation.

Self-reported health measures are based on an individual's own perception of their health status and functioning. These measures provide an alternative source of data to objective measures of health, such as hospital rates and disease prevalence.

The WHO defines a 'health state' as a multi-dimensional attribute of an individual that indicates his or her level of functioning across all important physiological, psychological and psychosocial dimensions of life. The relevant dimensions are those defined in the International Classification of Functioning, Disability and Health (WHO 2001a).

Various survey instruments have been developed to assess these dimensions. For adults, instruments included in the core NZHS are the WG-SS and the K10.

In the 2023/24 NZHS, the SF-12 was removed because respondents complained of too many questions on mental health, and this instrument was not a cost-effective way to obtain the information that this instrument captures.

Functional difficulties

A set of six questions, known as the Washington Group Short Set (WG-SS), on functional difficulties and activity limitations was first included as a module in the 2018/19 NZHS for adults and children aged 5–14 years. In 2019/20, the WG-SS was added to the core component of the adult survey so the information can be collected every year. These questions were developed by the Washington Group on Disability Statistics (WG), a United Nations city group established to address the need for internationally comparable population-based statistics on disability.

The WG-SS identifies respondents who are more likely to experience restrictions in social participation because of difficulties undertaking basic functional activities (Washington Group on Disability Statistics 2016a). These activities are seeing (even with their glasses), hearing (even with their hearing aid), walking or climbing stairs, remembering or concentrating, self-care and communicating.

The WG-SS was developed for inclusion in population surveys and will allow comparisons of NZHS results for disabled people with the rest of the population. Several New Zealand population surveys have included the question set, including the New Zealand General Social Survey (NZGSS) and 2018 New Zealand Census of Population and Dwellings. The WG-SS identifies disabled people as those who have a lot of difficulty with, or cannot do at all, at least one of the six specified activities.

In the 2022/23 and 2023/24 NZHS, a further six module questions on disability were added to the adult questionnaire to make up the Washington Group Short Set

Enhanced (WG-SS Enhanced – the WG-SS is a subset of the WG-SS Enhanced). The extra six questions in the WG-SS Enhanced include two questions on upper body functioning and four on affect.

The WG-SS was repeated as a module for children in the 2019/20 and 2020/21 surveys, but these questions didn't work well to identify disabled children, and this data hasn't been published. In the 2022/23 survey, the questions were replaced with the Washington Group / UNICEF Child Functioning Module (CFM), which is better at identifying children with disabilities than the WG-SS because it covers developmental disabilities (Washington Group on Disability Statistics 2016b).

The CFM was reduced by excluding questions that are not directly used in deriving disability status, as per Stats NZ usage in the Household Economic Survey (HES). People aged 5 to 14 years are disabled if they have serious difficulty with at least one of the following: seeing (even with glasses), hearing (even with hearing aids), walking, feeding or dressing themselves, communicating, learning, remembering, concentrating, accepting change, controlling their own behaviour, making friends, experiencing anxiety or experiencing depression. 'Serious difficulty' means the child feels very anxious, nervous or worried and/or very sad or depressed daily and/or has at least a lot of difficulty with any of the remaining domains of functioning.

The disability questions (WG-SS Enhanced and CFM) do not cover all types of disability and should not be used to determine overall disability prevalence. Both these sets of questions on functional difficulties are likely to become core questions in future. Further information on the disability questions is available on the Washington Group on Disability Statistics website at washingtongroup-disability.com

K10

The Kessler Psychological Distress Scale (K10) is an internationally validated instrument used to screen for non-specific psychological distress in a population (Andrews and Slade 2001). Psychological distress refers to a person's experience of symptoms such as nervousness, restlessness, fatigue, or depression in the past four weeks.

The K10 was developed to identify severe non-specific psychological distress in population surveys (Kessler et al 2003). It is not a diagnostic tool, so it is not used to measure the prevalence of mental health conditions in the population.

The K10 was included for the first time in the 2006/07 NZHS.

K10 scoring

Each of the 10 questions in the K10 has five possible responses: 'all of the time', 'most of the time', 'some of the time', 'a little of the time' or 'none of the time'. For the NZHS, the response to each question was coded to allow scoring as follows: 'all of the time' was set to 4; 'most of the time' was set to 3; 'some of the time' was set to 2; 'a little of the time' was set to 1; 'none of the time' was set to 0; and all other values were set to missing. The possible range of scores is 0–40, with higher scores indicating higher psychological distress.

For NZHS reporting, psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more (see Table 6).

Table 6: Scoring for the K10

Score	Interpretation
0–5	None or low psychological distress
6–11	Moderate psychological distress
12–19	High psychological distress
20–40	Very high psychological distress

Life satisfaction and family wellbeing

Subjective (personal) wellbeing has at least three dimensions: evaluative, eudemonic (relating to a sense of meaning and purpose in life) and affective experience. The OECD guidelines on measuring subjective wellbeing recommend that subjective wellbeing indicators include at a minimum a measure of life evaluation then, in descending priority, affect measures and domain-specific life evaluations followed by eudaimonia (OECD 2013).

In the 2021/22 NZHS, an overall life satisfaction question was added to the NZHS, sourced from the NZGSS. Life satisfaction was added to the survey to capture an aspect of positive mental health. Mental health is more than the absence of mental illness. Rather, mental health is ‘a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community’ (WHO, 2001b, p1). People can have a mental illness and be satisfied with life, and vice versa – this is the dual continuum model of mental health and illness (Keyes 2007).

The family wellbeing evaluation question was added to the NZHS for the first time in 2021/22, to reflect the importance of family and whānau to New Zealanders, and particularly Māori and Pacific peoples. Often, for Māori and Pacific peoples, for an individual to be well their families need to be well (Kukutai et al 2017).

The family wellbeing question was sourced from the 2016 NZGSS conducted by Stats NZ. Whānau wellbeing was first asked about in the 2013 Te Kupenga survey: the first nationally representative survey of Māori wellbeing, conducted by Stats NZ. The word ‘whānau’ was replaced with ‘family’ when this question was added to the 2016 NZGSS. Both ‘family’ and ‘whānau’ are self-defined by the respondent.

The life satisfaction and family wellbeing questions appear near the beginning of the questionnaire, after the initial demographics and before the long-term conditions sections. In the 2022/23 NZHS, these questions were made self-complete so respondents could get used to the self-completing process with some less personal questions. As with other self-complete questions, these will revert to face-to-face if the respondent cannot self-complete.

Loneliness

Loneliness was included in the adult 2016/17 mental health and substance use module and then again in a module in the 2020/21 NZHS because of growing concerns that COVID-19 restrictions would lead to an increase in loneliness. It became a core question in 2021/22.

Loneliness is a feeling that most people will experience at some point in their lives. However, prolonged and extreme exposure to loneliness can seriously impact an individual's wellbeing and their ability to function in society. Research shows loneliness is linked to poor physical and mental health, and poor personal wellbeing (Office for National Statistics 2018). Loneliness is not the same as social isolation. Loneliness is a negative subjective state related to having less social contact than desired (Peplau and Perlman 1982). The phrase 'social isolation' describes the state of having minimal contact with others. Social isolation can lead to loneliness in some people, while others can feel lonely without being socially isolated.

The question about loneliness is administered face to face after the K10 questions. This question was sourced from the NZGSS conducted by Stats NZ.

Child development module

The 2023/24 survey marks the eighth year that the NZHS has included specific instruments for monitoring children's development. The module includes the Strengths and Difficulties Questionnaire (SDQ) and questions about parental stress. The COVID-19 pandemic has caused multiple challenges for many families in New Zealand, and these demands are likely to have affected children's wellbeing and parents' stress levels.

Parents/caregivers of children aged 2–14 years self-completed the child module. Due to the sensitive nature of the questions, respondents did not answer if their interview was being conducted with language assistance from a family member or one of their friends.

Strengths and Difficulties Questionnaire

The SDQ is a brief emotional and behavioural screening questionnaire developed specifically for use with children and adolescents. It consists of 25 questions and has five subscales: emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial behaviour (Goodman 1997), as Table 7 shows. It has been used in over 40 countries and, in New Zealand, it has been a part of the B4 School Check programme for four-year-olds since 2009. It has also been used as an outcome measure in mental health services, so including this instrument in the NZHS provides population norms. The SDQ was previously included in the child development module in 2012/13, 2014/15 and 2015/16 and also in the behavioural and developmental problems module in 2016/17, 2021/22, 2022/23 and 2023/24. It has been validated internationally to screen for child and adolescent psychiatric disorders.

Table 7: Strengths and Difficulties Questionnaire questions

Scale	Not true	Somewhat true	Certainly true
Emotional symptoms scale			
Often complains of headaches, stomach aches ...	0	1	2
Many worries, often seems worried	0	1	2
Often unhappy, downhearted or tearful	0	1	2
Nervous or clingy in new situations ...	0	1	2
Many fears, easily scared	0	1	2
Conduct problems scale			
Often has temper tantrums or hot tempers	0	1	2
Generally obedient, usually does what ...	2	1	0
Often fights with other children or bullies them	0	1	2
Often lies or cheats	0	1	2
Steals from home, school or elsewhere	0	1	2
Hyperactivity scale			
Restless, overactive, cannot stay still for long	0	1	2
Constantly fidgeting or squirming	0	1	2
Easily distracted, concentration wanders	0	1	2
Thinks things out before acting	2	1	0
Sees tasks through to the end, good attention span	2	1	0
Peer problems scale			
Rather solitary, tends to play alone	0	1	2
Has at least one good friend	2	1	0
Generally liked by other children	2	1	0
Picked on or bullied by other children	0	1	2
Gets on better with adults than with other children	0	1	2
Prosocial scale			
Considerate of other people's feelings	0	1	2
Shares readily with other children	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Kind to younger children	0	1	2
Often volunteers to help others	0	1	2

Source: (c) Robert Goodman 2005

Scoring of the Strengths and Difficulties Questionnaire

A total difficulties score can be calculated by totalling the emotional symptoms, conduct problems, hyperactivity, and peer problems scales, which can indicate the overall risk of mental health problems. Approximately 10% of a community sample scores in the abnormal band on any given score, with a further 10% scoring in the borderline band (sdqinfo.org). Exact proportions vary according to country, age and gender.

Parental stress

The parental stress section contains five questions for the parent or caregiver on how they felt while caring for their child and whether they have access to day-to-day emotional support for raising children. The questions were included in the NZHS for 2012/13, 2014/15, 2015/16, 2016/17, 2020/21, 2021/22, 2022/23 and 2023/24.

These questions are originally taken from the National Survey of America's Families, 1997, revised for the United States National Study of Children's Health in 2007.

Household food security

This comprises an eight-item food security questionnaire developed by Winsome Parnell from the Department of Human Nutrition at the University of Otago. The items were developed from both a review of the literature and focus group research. The focus groups aimed to ensure the statements reflected the experience of Māori, Pacific and low-income households faced with difficulties accessing appropriate food (Parnell et al 2001).

These questions measure the extent to which New Zealand households have access to nutritionally adequate and safe foods. The questionnaire has internal and external validity (Parnell 2005) and was previously used in the child NZHS for 2012/13, 2014/15 and 2015/16, the adult and child NZHS for 2019/20, the child NZHS from 2020/21 onwards as well as the:

- 1997 National Nutrition Survey
- 2002 National Children's Nutrition Survey
- 2008/09 New Zealand Adult Nutrition Survey.

One of the items in the food security questionnaire is used to produce the percentage of children living in households reporting that food runs out often or sometimes, which the Government notified as a child poverty-related indicator under the Child Poverty Reduction Act 2018 in 2019.⁶

Household food security scoring

A summary index can be derived from answers to the items, providing an estimate of the severity of food insecurity a household is experiencing. Respondents can be categorised, based on this summary index, as one of the following: mostly to fully food-secure; moderately food-insecure; or severely food-insecure (Ministry of Health 2019).

⁶ 'Notification of Child Poverty Related Indicators Identified Under the Child Poverty Reduction Act 2018'. New Zealand Gazette, 2 September 2019, 16:38.

Sociodemographics

Health status, health risks and health service utilisation are strongly influenced by socioeconomic, cultural and demographic forces. Understanding the sociodemographic structure of a population is essential for interpreting survey data and using this evidence to inform policy.

Statistics New Zealand has developed standard sociodemographic questions for use in all household social surveys that are part of the official statistics system. The sociodemographic domain in the NZHS closely follows the Statistics New Zealand model, including questions from the New Zealand Census of Population and Dwellings and the NZGSS. In addition to self-reported variables (eg, age, gender, ethnicity, education, employment status, income, housing and household composition), the NZHS records variables derived from the census area unit/ primary sampling unit of the household (eg, area deprivation and rurality). Questions on health insurance are also included in the sociodemographic section of the adult questionnaire.

A question on sexual orientation was added in the 2015/16 NZHS. This question is self-completed by the respondent because of its sensitive nature. From 2016/17, the sexual orientation question was not asked for respondents whose interview was being conducted with cognitive or language assistance from a family member, caregiver or one of their friends. This was to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship. From the 2022/23 survey, this question was no longer skipped for everyone using cognitive or language assistance from a family member, caregiver or one of their friends. It is still a self-complete question but reverts to face-to-face if the respondent cannot self-complete.

In the 2022/23 NZHS, the question on gender was changed for both adults and children by adding an answer category of 'another gender – please specify'. A question was also added for adults asking what their sex was recorded as at birth, with response options of 'male', 'female' and 'another term'. Both of these questions were made self-complete for adults in the 2022/23 survey but revert to face-to-face if the respondent cannot self-complete.

In the 2023/24 NZHS, the core sociodemographics questions were refreshed to match the latest Stats NZ versions of the questions, as they appear in the 2023 Census and 2023 General Social Survey. Where these questions are in the child questionnaire too, they were refreshed to be equivalent to the adult questions. The following questions were refreshed:

- Highest secondary school qualification and highest overall qualification
 - small updates were made to the wording of some response categories
- Personal income sources
 - small updates were made to the wording of some response categories
- Personal income
 - question was changed to self-complete mode
 - top and bottom categories were changed to match the Census 2023 categories, reflecting an increase in income amounts
- Household income
 - question was changed to self-complete mode

- new category bands are based on 2021 NZGSS output, with the addition of a top income band to match the top personal income band
- Unpaid work and study
 - previous question was split into two questions to match Census 2023, because not all people who study do so without pay
 - slight wording changes were made to the categories for unpaid work
- House ownership and sector of landlord
 - two questions about holding the dwelling in a family trust and owning the dwelling were combined into a single question
 - two new categories of types of landlord were added
- Number of rooms
 - two questions about number of rooms were combined into a single question
- Sexual orientation
 - last response category was changed from 'other' to 'another identity – please specify'.

A new self-complete question on household income adequacy was added to both the adult and child core questionnaires, to better understand the impact of poverty on health. This question is derived from Stats NZ's Disability Survey 2023. A similar question was asked in the 2006/07 and 2013/14 NZHS.

Racial discrimination

Racial discrimination is increasingly recognised as an important health determinant and driver of ethnic inequalities. It is associated with many risk factors and health outcomes. The 2023/24 NZHS included a racial discrimination clip-on module.

'Racial discrimination' in the NZHS relates to a respondent experiencing an ethnically motivated personal attack (physical or verbal) and/or unfair treatment on the basis of their ethnicity in any of three situations: health care, housing or work. Previous research using the NZHS results has shown that racial discrimination experienced across a range of settings has the potential to impact on a wide range of health outcomes and risk factors (Harris et al 2012). It has been linked to negative outcomes for mental and physical health, health risk factors and health service use and experience. Data about racial discrimination in New Zealand will contribute to monitoring equity in Māori health outcomes and racial discrimination within the health and disability system, housing and work sectors.

The racial discrimination questions were included in the NZHS for 2002/03, 2006/07, 2011/12, 2016/17 and 2020/21. The questions were originally developed from items in the United Kingdom Fourth National Survey of Ethnic Minorities, 1993–1994 (Modood et al 1997) and the Behavioral Risk Factor Surveillance System (BRFSS) (Centers for Disease Control and Prevention 2002).

Health measurements

The WHO STEPS approach to monitoring chronic diseases and their risk factors covers three levels of data collection:

- Step 1 – questionnaires
- Step 2 – physical measurements (eg, height, weight, blood pressure)
- Step 3 – biomedical measurements (eg, blood and urine samples).

The NZHS questionnaires have always collected data on chronic diseases and their risk factors. Up until 2002/03, physical and biochemical measurements were only included in nutrition surveys, but these objective measurements have gradually been added to the NZHS.

The measurement of adults' body size was added to the NZHS core content in 2002/03 and extended to include children in 2006/07. The measurement of adults' blood pressure was added to the NZHS core content in 2012/13.

Biomedical measurements (adults only) were included as a module in the 2014/15 NZHS.

Health measurements were not collected in the 2021/22 NZHS due to COVID-19 restrictions. Collection of health measurements resumed in the 2022/23 survey, except for the measurement of blood pressure which resumed in the 2023/24 survey.

Body size

A healthy body size is recognised as being important for good health and wellbeing. There is strong evidence that obese children and adults are at greater risk of short- and long-term health consequences (WHO 2000).

Self-reporting height and weight is unreliable compared with measuring these factors (Gorber et al 2007). Overall, people underestimate their weight and overestimate their height (resulting in a lower BMI), and they are more likely to do so if they are overweight or obese. The 2022/23 and 2023/24 NZHS included module questions for adults on self-reported height and weight so we can understand the difference between self-reported and actual measurements in the New Zealand population. This is particularly important for when we cannot conduct face-to-face interviews, such as during the COVID-19 restrictions in the 2021/22 survey year. The 2022/23 and 2023/24 NZHS also included an adult module question on perceived weight (ie, very underweight to very overweight) to understand respondents' perception of their own weight.

For the NZHS, height and weight are measured for respondents from the age of two years and over, and waist measurements are taken for respondents from the age of five years and over. Measurements are not taken for pregnant women. Measurements are collected following a standardised protocol and using the same professional anthropometric equipment as for the 2011/12 NZHS – apart from the introduction of laser height measurement in 2012/13.

Data on height and weight are used to calculate body mass index (BMI), which is used to classify people as underweight, a healthy weight, overweight and obese according to international cut-off points. BMI cut-offs points are intended to identify people or populations at increased risk of health conditions, such as type 2 diabetes, associated with increasing BMI rather than being a measure of body fat.

Blood pressure

High blood pressure (often referred to as hypertension) is a risk factor for ischaemic heart disease, stroke, hypertensive heart disease, kidney failure and dementia.

Usually, no symptoms are associated with high blood pressure, so self-reporting will underestimate its prevalence. The best way to monitor population blood pressure is to take actual blood pressure measurements. By combining data on self-reported and measured high blood pressure, we can also estimate levels of hypertension awareness, treatment and control. Measurement of blood pressure in adults was introduced into the annual core content of the NZHS in 2012/13. It was removed in the 2017/18 and 2022/23 surveys to allow more time for the questionnaire portion of the survey and was not collected in the 2021/22 survey due to COVID-19 restrictions.

Measurements of blood pressure and heart rate are made using standardised protocol and an OMRON HEM-907 device, which automatically records heart rate, systolic and diastolic blood pressure three times, with a 1-minute pause between measurements.

Consents

Prior to the 2021/22 NZHS, participants signed informed consent forms to participate in the survey. From the 2021/22 NZHS onwards, participants provide informed consent verbally, which is stored as part of the questionnaire. Consent or assent is provided by:

- adults aged 15 years and over
- people with enduring power of attorney or welfare guardians for adults unable to provide consent
- parents or legal guardian of respondents aged 15 years (alternatively to those respondents answering for themselves)
- parents or legal guardians of children under 15 years.

From the 2021/22 NZHS onwards, verbal consent is collected as part of the questionnaire, for permission for:

- the survey supervisor to contact them again for audit purposes
- NZHS researchers to contact them again within the next two years about the possibility of answering other health-related questions of importance to the Ministry
- their survey data to be combined with other information already routinely collected by government agencies.

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